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ABSTRACT

A review of anthropological, psychological, and educational research pertaining to the quiet manner of American Indian students in classroom situations is presented. This phenomenon has been explained using the research perspectives of the learning style theory and interference theory. The learning style theory states that Indian children behave quietly in school because at home and in their community they learn primarily through nonverbal mechanisms, while the interference theory proposes Indian students are quiet because the classroom situation is not structured in a way that permits these students to display their existing verbal competence. A critical evaluation of samples of old and new testing literature is made in considering the influence of intelligence test results on models created to explain the verbal-nonverbal behavior of Native Americans. A discussion of the differences and similarities between the learning style and interference perspectives follows. Based on the research, 15 teaching techniques are suggested to enhance verbal performance and classroom participation of American Indian children. The suggestions are organized into four general categories of general atmosphere and classroom organization, observational and experiential learning, verbal activities, and community relations. A curriculum vitae of the author concludes the paper. (ERB)

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THE NONVERBAL AMERICAN INDIAN CHILD IN THE CLASSROOM: A SURVEY

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ABSTRACT

The author reviews the anthropological, psychological and educational research pertaining to the frequently reported quiet manner of American Indian students in classroom situations. Two research perspectives which have been used to explain this phenomenon are presented; the learning style and interference theories. The influence of intelligence test results on models created to explain the verbal-nonverbal behavior of Native Americans is discussed. Finally, fifteen teaching suggestions are offered to instructors who encounter Native American students.

The purpose of this literature survey is to review the anthropological, psychological and educational research pertaining to the frequently reported quiet manner of American Indian students in classroom situations.[1] Two research perspectives have been used to explain this phenomenon. Let us call these perspectives the learning style and interference theories. Learning style theory states that Indian children behave quietly in school because at home and in their community they learn to learn primarily through nonverbal mechanisms such as observational and trial-and-error learning (Cazden and John, 1971; John, 1972; Scribner and Cole, 1973; Werner and Begishe, 1968; Rohner, 1965). According to this view, Indian children bring their traditional style of learning with them into the classroom context. These children are thought to attend readily to the nonverbal behavior of teachers and other students because this is their culturally appropriate mode of attending. This nonverbal mode is thought to be continually reinforced in the home and community by the instructional styles of parents, siblings and peers.

Interference theory proposes another cause for American Indian quietness in school. Interference theorists argue that Indian students are quiet because the classroom situation is not structured in a way that permits these students to display their existing verbal competence (Dumont, 1972; Philips, 1972). This view maintains that Indian children frequently use speech in learning contexts in their communities. However, upon entering school each child must begin to learn a new set of skills using unfamiliar materials from a foreign instructor who displays a different language, teaching style and personality in an unusual social and physical

environment. Thus, the cause of Indian quietness in schools is attributed to the mismatch between the context and function of speech in the child's home and community and the context and function of speech he/she encounters in the classroom situation. The Indian child who speaks a native language at home but must communicate in English in school experiences this mismatch most acutely.

There is a region of agreement between the learning style and interference perspectives. Both attribute classroom silence to some extent to cultural factors. Viewed from the learning style perspective, the Indian student is culturally oriented towards visual attending (Cazden and John, 1971). Viewed from the interference perspective, the Indian child is culturally disposed to quietness in unpredictable social situations (Basso, 1970).

The course of this paper will be as follows. First, we will consider the influence of intelligence test results on models created to explain the verbal-nonverbal behavior of Native Americans. A representative, but by no means exhaustive, sample of the old and new testing literature relevant to Native Americans will be critically evaluated. Second, the differences and similarities between the learning style and interference perspectives will be discussed. Finally, the author will suggest fifteen teaching techniques which appear to be advantageous in enhancing the verbal performance and classroom participation of American Indian children.

INTELLIGENCE TESTING

Intelligence test results have influenced researchers who are concerned with the cognitive style of Native American peoples. Some researchers have assumed the cognitive style of Indian peoples to be

perceptual, figural, spatial and visual because of two factors. Indian children score high on standardized nonverbal tests which do not require reading or word knowledge. In contrast, Indian children score low on tests requiring reading or word knowledge in English. In order to clarify the above assumption, a selective review and critique of some of the major intelligence test results among North American Indian peoples will now be given; see Guilmet (1975) for an exhaustive review and critique of the cognitive research among the Eskimo.

Early Results

Standardized performance tests of intelligence exist which do not require reading or word knowledge. Some of the earliest testing found that Indians performed better on nonlanguage tests of intelligence than on language tests. Indeed, a series of such findings led Snider to conclude that with regard to the differences between Indian and standardization samples the "greatest differences exist in the cases of the tests with the highest verbal saturation" (1961:42). For example, the Grace Arthur Performance Test of Intelligence was given by Havighurst and his colleagues in 1942 to a sample of Indian students aged six to sixteen representing sixteen tribes (Havighurst and Hilkevitch, 1944). The average I.Q. score of this sample was 100.2, slightly above the national average for whites. As part of this study, a group of thirty Sioux pupils on the Pine Ridge Reservation made an average I.Q. score of 102.8. The exact same group tested a year later with the Kuhlmann-Anderson, a verbal test requiring English reading ability made an average I.Q. score of 82.5. Havighurst (1957) reviewed the studies of intelligence of Indian children up to that date and concluded that all recent studies show that on nonverbal intelligence tests Indian children have: (1) the same average

scores as white children, (2) the same range of performance between tribes and between communities within tribes as white children show between and within communities.

Indian children from many tribes have excelled on Draw-a-Man (DAM) tests scored for accuracy in proportion and detail (Rohrer, 1942; Russell, 1943). Havighurst, Gunther and Pratt (1946) administered the DAM test to 1,000 Hopi, Navajo, Papago, Sioux, Zia and Zuni children. The average I.Q. scores ranged from 117 for Hopi children to 102 for Sioux children.

> The children of Indian tribes which have kept close touch with the world of nature and their indigenous cultures are specially stimulated to observe accurately, to organize their observations and express them aesthetically, and thus may be expected to do well on the DAM test. White children, and urban white children especially, may have much less chance to form concepts from firsthand ovservation, but must rely more upon books and words (Havighurst, Gunther and Pratt, 1946:61).

Dennis (1940, 1942) gave the DAM test to 152 Hopi children with similar results. The group I.Q. score was 108.3. Dennis and Havighurst, Gunther and Pratt found that Hopi boys scored higher than Hopi girls on the DAM test. Dennis believed the latter result is explained by the fact that "graphic art is almost entirely a masculine activity in Hopi culture" (Dennis, 1940:342). Thus Hopi males practice drawing skill much more often than do Hopi females. Similarly, "free drawings" of ninety Hopi children were compared with drawings of 1,400 Cleveland school children (Havighurst and Neugarten, 1955). Even though many of the Cleveland children attended art classes, the investigator found that the Hopi and Cleveland children exhibited a similar developmental sequence toward realism and spatial representation. Two exceptions to this general trend were noted: (1) the Hopi children achieved the first, second, third, and fourth stages, as defined by the researcher, a year or two earlier than the Cleveland sample, and (2) after age twelve the final developmental patterns of the two groups

departed. At this age the tribal preference for stylized Katchina forms shifted the Hopi pattern away from the Cleveland children's preference for spatial representation.

Later Results

Coleman (1966) administered the following tests to a large sample of first-grade Indian children, tribes unspecified, as part of the Office of Education sponsored study of educational opportunity: (a) a nonverbal classification test on which the child is asked to select one of four pictures that goes with an initially presented one, (b) a nonverbal association test on which the child is asked to select the one that is not like the others, and (c) a picture vocabulary test. Scores were converted to a scale on which the national median for all children is 50. Scores for firstgrade Indian, Black, and majority White children are given below (Coleman,1966: 20):

National First-Grade Test Scores

	Indian	Black	White
Nonverbal	53.0	43.4	54.1
Verbal	47.8	45.4	53.2

This result confirmed the earlier findings that Indian children performed much better on nonverbal tasks than on verbal tasks.

Cundick (1970) found that 72 Southwest Indian elementary students, largely Navajo with some Utes, achieved "relatively normal" performance I.Q.s on the Wechsler Pre-School and Primary Scale of Intelligence (WPPSI), the Wechsler Intelligence Scale for Children (WISC) and the Goodenough-Harris Draw-a-Man Test. The above tests and subtests are primarily nonverbal in orientation. In contrast, these same children received much lower I.Q. scores on the verbal subtests of the Wechsler Scales and the Peabody Picture

Vocabulary Tests (PPVT), a series of verbal tasks.

The Illinois Test of Psycholinguistic Abilities was administered to eighty Papago children in the first and third grades in and around Tucson, Arizona (Lombardi, 1970). In comparison with the group on which the test was standardized the Papago children generally received lower scores. However, on the "visual sequential memory" task, one of the twelve subtests, the Papago children received significantly higher scores than the comparison group. In this subtest the examiner arranges a set of small geometric shapes in a certain order, leaves them before the child for five seconds, then rearranges them in a random way and asks the child to arrange them in the original order.

The National Study (Levensky, 1970) tested 867 Indian and Eskimo children between the ages of six and 8.5 years in twenty-five elementary schools using the Draw-a-Man test. At the same time one hundred Caucasian children were tested. These Caucasian children appeared in the same classrooms as some of the Indian and Eskimo children. The average I.Q. for the entire Indian sample was 103 for boys and 108 for girls. Both are well above the national average for Caucasians. However, Thurber (1976) indicates that Navajo children who have substantial contact with the "dominant white culture" show a marked decline in DAM scores in comparison to their more traditional counterparts in previous studies. Thurber attributes this finding to two factors: (1) comparatively impoverished living conditions of the children in his study, leading to limited exposure to sources through which the representational art of the dominant culture is presented (television and other visual media) and (2) the ostensive detachment of these children from Navajo values with a concomitant lessening of traditional artistic stimulation.

In the late 1960's several studies demonstrated that Canadian Indian and Metis peoples frequently achieved higher or equivalent scores than whites on nonverbal and spatial tests (MacArthur, 1968, 1969; Vernon, 1969; Gaddes, McKenzie and Barnsley, 1968). These same studies made it clear that on verbal and scholastic tests whites score higher. More recently, Wilson (1973) found that thirty Canadian Indian children, aged six to twelve years with little or no formal education, achieved scores on the Raven Progressive Matrices and the performance portion of the Wechsler Intelligence Scale for Children (WISC) very similar to thirty non-Indian school children of the same age and similar "socio-intellectual" background. Finally, Cropley and Cardey (1975) noted that Canadian Indians and whites did not differ in their mean scores on the Goodenough-Harris Drawing Test, but whites surpassed the Indians on a combination of the following verbal tests; the Pintner-Cunningham Primary Test and the Alpha Test (Form A) of the Otis Quick-Scoring Mental Ability Test. The authors suggest that these two intellectual measures represent two opposing kinds of cognitive tasks; the Pintner-Otis tests emphasizing verbal-abstract skills, the Goodenough-Harris Drawing Test representing nonverbal-concrete skills. Thus, we see clearly the process through which cognitive tests are used to attribute a nonverbal-concrete cognitive style to Indian peoples. Whether the recorded performances of Indian peoples is due to a cultural preference for visual attending or to the fact that verbal tests are conducted exclusively in English, a recently introduced language, is an open question. Not one researcher, to my knowledge, has published the results of a verbal intelligence test administered in an Indian language to competent Native speakers.

Criticisms of Test Results

Within the anthropological community standardized tests are viewed as

being severely culture-bound. Indeed, the search for a culture-fair or culture-free intellectual test has been almost abandoned. Criticisms of standardized tests are many. We will briefly mention only a few. First, the content of such tests can not be directly transferred from one culture to another. Activities, concepts and artifacts present in one culture are not predictably present in another. Since words function as labels for activities, concepts and objects, it follows that word inventories vary from one culture to another. In the case of the testing of Native Americans, relevant Indian languages are not even used as the test languages. This problem is further complicated by the fact that most American Indian groups are undergoing rapid linguistic change from aboriginal languages to a complex set of English dialects. Thus, Indian students may be exposed to a Native language in the home but English in school. As you can well imagine a large variety of other sociolinguistic combinations occur within and between individual tribal groups.

Second, the process through which intellectual skill and knowledge are assessed, if they are assessed at all, varies greatly from culture to culture. The one means of assessment that is never practiced in aboriginal contexts is the use of the analytic rule-set (Cohen, 1969) in the context of formal and especially written tests. Also, as we will discuss later, the individual's willingness to openly compete with peers varies from one Native American group to another. Further, Native American students are not always receptive to strangers, especially Caucasians, who attempt to interact with them on an instructor-student or researcher-student basis. Besides having historical justification for being suspicious of strangers, stratified adult-child interactions of this form are not always culturally appropriate.

Finally, many anthropologists hold the view that human intellectual knowledge and skill is expressed in a large number of quantitatively non-comparable ways. For example, it seems impossible to assess cognitive knowledge and skill related to hunting in an arctic environment (Nelson, 1969) on the same numerical scale used to assess navigation between distant atolls in the South Seas (Gladwin, 1970). This problem has led Berry (1972), a noted cross-cultural psychologist, to conclude that there is no universal intelligence which simply manifests itself in different ways according to environmental demands. Rather, there are many "intelligences" qualitatively different from each other. Viewed from this perspective, intelligence tests primarily function as a measure of acculturation to the mainstream western-intellectual tradition.

The reason that verbal tests are more culture-bound than nonverbal tests is clear. Linguistic forms vary much more arbitrarily than do graphic representations and object shapes between cultures. Restated in another way, linguistic experiences are less shared between divergent social groups than are nonverbal-perceptual experiences. As a consequence, cross-cultural tests which are dependent upon language competence in English will show greater variablility in their results than cross-cultural tests based on manipulating object shapes and their representations.

LEARNING STYLE RESEARCH

It is probable, as we have seen, that researchers who propose the learning style perspective have been partially influenced by the results of cognitive testing among Native Americans. Researchers have assumed the cognitive style of Indian peoples to be perceptual, figural, spatial and visual because of two factors. Indian children score high on standardized nonverbal tests which do not require reading or word knowledge. In contrast,

Indian children score low on tests requiring reading or word knowledge in English. For example, Cazden and John have used testing data to support their conclusion that "learning through looking" is a primary learning mechanism in American Indian societies:

> Throughout the literature on Indian children we find suggestions that their style of learning is more visual than verbal, more learning by looking than learning through language. Learning by looking may be reflected in several different performances: relative superiority on tests of visual abilities, skill in interpreting photographs, proficiency in spelling, culturally developed forms of visual art that are tapped by Draw-a Man (DAM) test, and learning by imitation (1971:256).

However, these authors recognize that other forms of evidence support the learning style perspective. Let us consider this additional evidence.

Early Ethnographic Reports

In the first half of this century, ethnographers reported that observation, imitation and trial-and-error were primary mechanisms for learning technical knowledge and skill in traditional Native American societies. Technical knowledge and skill refer to techniques of counting; to practices of folk medicine; to crafts such as beading, carving, silverworking, leatherworking or weaving; to trades such as housebuilding, boatbuilding or glass working; and to subsistence occupations such as fishing, hunting, trapping, gathering, herding or agriculture. Joseph, Spicer and Chesky observed that Papago children "... learn mainly by imitation, without explanation by adults and without asking many questions.... direct question and answer is not the Papago way of acquiring or giving information; hence the Papago child is not encouraged to ask how to do things" (1949:132). These authors note that while learning to cook, one little Papago girl attempted to do what she had seen her mother doing. Adults gave little, if any, assistance to the novice, but they watched her closely and made it clear that they were pleased if she succeeded. However, direct praise was seldom given. Underhill

(1939) has similarly stated that for a younger Papago person to question an older one was considered forward and discourteous. Thus, a person desiring to learn techniques in counting, measuring and time reckoning ". . . merely haunted the society of an older relative until information was offered" (Underhill, 1939:122). Underhill stated that if a person had no relatives with the desired knowledge his/her chances of learning were small, since prolonged contacts with people outside the family were few. Public recognition of the increasing responsibility for children was minimal. "The Papago believe that, just as a baby learns to walk and talk when he is ready, the older child need not be mercilessly prodded" (Joseph, Spicer and Chesky, 1949:132).

Honigmann observed a similar situation among the Kaska:

> Instruction and direction are rarely explicit. "Do this," is the formula, and the child is left with the task of working out the details of an activity for himself. If the young girl is asked to make a fire and tries to light large pieces of wood without first splitting kindling, the task will be taken over by an adult. The child may then observe the correct sequences for the completion of the activity, but few people trouble to drill these into the learner (1949:185).

The Kaska boy learns masculine skills by "observing" older men prepare snowshoe frames, hew lumber, or manufacture implements, vehicles, building and tools (Honigmann, 1949). Near puberty he begins to manufacture these devices on his own and to hunt large game with an age mate. Sometimes he acts as the protege of an older man. The Kaska girl learns to tend rabbit snares, cut wood, wash clothes and cook ". . . all by following the examples of her mother or older sisters and with a minimum of verbal instruction" (Honigmann, 1949:185). Unlike Papago custom, Kaska adults verbally reward their children for achievement. When a boy kills his first moose or caribou he is the recipient of considerable attention and praise.

Likewise, a girl's sewing is pointed to with pride by her mother and father.

Lee retells the autobiography of a Dakota Indian boy who describes how learning through observation was taught:

> Chiyesa . . . points out how he was brought up to discover. He was being raised by his uncle and his grandfather. He tells how when he was about five or six he would leave at daybreak. He just went out . . . Nobody asked him what he was going to look for or to take his rubbers along. However, his uncle was there and all he said was "Look carefully at everything you see . . ." In the afternoon when he returned . . . his uncle would question him, saying "On which side of the tree did the bark grow the thickest?" The small boy had not been told to look closely at the tree or the bark but he had been told to look closely, and he had been taught to be alert--to look and listen fully--in order to answer any question he might be asked (Lee, 1967:58).

Pettitt (1946) reviewed educational processes in North American Indian societies and concluded that imitation is common learning process in these societies. Pettitt suggested that a greater proportion of the culture of a small-scale, nonliterate society is within the direct reach of the sensory organs of the child. However, in more complex societies adult activities are less understandable by observation alone. Further, Pettitt noted that in most Native American societies imitation of adult skill often occurred in the play of children. He suggested that in complex societies adult skills are so removed from the view of children that they cease to appear in their active play. Therefore, the future roles of urban children have become less directed by adults. As a result, play at home and learning in school have perhaps become more separated. Within nonliterate societies, Pettitt found that play, where it reflected future adult skill, was more like direct practice than merely imitation.

Recent Evidence

The early reports suggested that two kinds of learning processes might exist through which technical knowledge and skill can be learned:

(1) an observational-experimental type displayed by Native American children in their homes and communities, and (2) a verbal-mediated type required for success in classroom contexts. Recent evidence had supported this hypothesis.

Philips (1972) has observed the use of observational learning strategies in Warm Springs Indian homes. Children are present at many adult interactions as "silent but attentive observers" (Philips, 1972:385). Philips notes that there is some evidence that this "silent listening and watching" was traditionally the first step in learning skills of a fairly complex nature in the Warm Springs culture: "... Older women reminisce about being required to watch their elder relatives tan hides when they were very young; rather than being allowed to play" (1972:386). Further, Philips has stated that the context of verbal exchanges between adults and children during technical learning situations in Warm Springs Indian homes differs from analogous verbal-exchange contexts in non-Indian homes. When verbal exchanges occur between the child and the adult in Warm Springs Indian homes, they are preceded by long periods of observation of adult behavior on the part of the child. "The absence of such observation among non-Indian children is perhaps replaced by elaborate verbal instructions outlining the full scope of a task before the child attempts any part of it" (Philips, 1972: 386).

Collier noted that Navajos excel at identifying and interpreting details in photographs of familiar scenes "as long as visual circumstances were such that they were willing to discuss and explain the photographic content" (1967:57). Collier stated that some of the identified details were not "visible" to himself without the use of a magnifying glass. Collier attributed the perceptual skill of these Navajos to the enhanced

". . . sensory perception of a preliterate culture in which a man must survive by astute visual analysis of the clues of his total ecology" (1967:54). Similarly, Nelson (1969) has reported that Alaskan Eskimos from Wainwright, Barrow and Point Hope were able to: (1) detect slight cracks in ice in order to keep from being stranded on an icepack which could break up and drift out upon the ocean; (2) observe the subtle patterns of light and dark made on clouds by light reflected from water, ice, and land in order to predict weather conditions; and (3) perceive and memorize minute geographical detail in order to navigate over seemingly featureless tundra.

Rohner (1965) notes that Kwakiutl children learned by "observation, manipulation and experimentation" in their native setting. However, they must attempt to learn through "verbal instruction, reading and writing" if they are to adapt to the learning style required in the classroom.

In the school context, language is thought to be the predominant mode of transmitting and acquiring information (Bruner, Oliver and Greenfield, 1966). Children and adults are always learning through the medium of language both inside and outside of school. What is special about the school situation is that language becomes almost the exclusive means of exchanging information (Scribner and Cole, 1973). When linguistic forms are the exclusive means of communication the amount of information available to the learner is restricted. Scribner and Cole (1973) relate the following example to illustrate their position. Compare the many rich sources of information available to the child who learns to weave by watching and doing with the restricted information available to the child who learns to weave by watching a lecture. The first child sees particular bits of material varying in width and resistance, compares his/her physical movements to those of the modeler, and integrates all these inputs from

different sense modalities into his/her cognitive scheme of what weaving is all about. The latter child loses all these sensory inputs and is left only with verbal descriptions of material and procedure.

Learning style theorists point out that observation and manipulation are effective methods for learning many complex cognitive skills. A recent survey of psychological research has shown observation to be an effective method of learning a variety of generalized language rules, abstract concepts or principles, Piagetian conservation responses, problem solving strategies and creative responses (Zimmerman and Rosenthal, 1974). Middle-class Anglo-American six-year olds, lower-class Chicano first-graders, and four-year olds all learned conservation through imitation of a model (Rosenthal and Zimmerman, 1972). Economically disadvantaged seventh-graders learned to produce complex sentences and past perfect verb forms through observation (Rosenthal and Carroll, 1972). Not only can general strategies or rules be acquired through observation of a model, but response predispositions such as speed of performing conceptual tasks are also affected (Debus, 1970; Ridberg, Parke and Hetherington, 1971).

Cazden and John maintain that the mismatch between the Native American child's culturally appropriate learning style and the verbal-instructional mode of formal education does not have to exist:

> Such discontinuity is not inevitable. Instructional methods can be changed. The Indian child's visual abilities can be used as a foundation for learning in other areas. Mathematics can be learned through the manipulation of concrete materials such as Cuisenaire rods. Language development can be nourished by asking children to express in words those visual discriminations that have been previously well learned either out-of-school or in school. For example, a rodeo lotto game for Navajo children would require them to express in words distinctions already well learned in visual terms such as the sizes and sexes of animals and the positions of riders. Or, after two children each learn to do a particular jigsaw puzzle, they can work together--one child supplying the

> pieces, the other child asking for them one-by-one to put in his frame: "Give me the piece that fits under his neck"; "Give me the big, white one." Visual abilities can be channeled into other forms of expression. For example, map-making and photography could be done in the classroom (Cazden and John, 1971:259).

Many educational programs already exist in our society which feature observation as a primary learning mode. Intern programs for physicians, on-the-job training for policepersons and firepersons, and apprentice programs for ironworkers, mechanics, loggers, jewelers and other trades all depend heavily on observational learning. A novice spends most of his/her time assisting experienced professionals. Learning proceeds primarily by demonstration with a minimum of accompanying verbal statements of rules or principles. The apprentice watches and then participates in a number of demonstrations of a task. From these experiences she/he acquires generalized ways of performing the skill.

To summarize, those who support the learning style theory see a conflict between the observational learning mode common to most traditional Native American societies and verbal mediated learning as practiced in most schools. Verbal mediation enhances an individual's ability to contribute to the "universe of the written word" (Price-Williams, 1975) and to solve problems verbally. Observation promotes the ability to contribute to the universe of objects and to solve problems nonverbally.

> Unfortunately, we all know too many examples of school learners who "know the words" but not the referents, who are limited by their empty verbal constructs just as informal learners may be limited by their inarticulated practical constructs (Scribner and Cole, 1973: 557).

Criticisms of the Learning Style Perspective

Before turning to a discussion of the interference perspective we should note two major criticisms of the learning style perspective. First, many researchers object to drawing conclusions about the cognitive

style of Indian peoples from the results of the established types of intelligence tests.[2] For example, all of the cited verbal tests were dependent upon verbal competence in English. Thus, the poorly developed verbal abilities may be an artifact of culturally inappropriate verbal tests conducted in and dependent on competence in a recently introduced language. Voyat (1970) conducted a study of the intellectual development of seventy-five Oglala Sioux children which supports this view. Using exactly the same experiments and questions that Piaget had used with Swiss children, Voyat found that the Sioux children passed through the same cognitive stages and at approximately the same time as Swiss children, Voyat states that this result means that the inferiorities shown by I.Q. tests among Indian children are dependent upon the nature of these tests themselves. As we have noted, not one researcher has published the results of a culturally sensitive verbal test based on and conducted in a native language to determine the extent to which verbal competence is developed among skillful native speakers.

Second, while it is possible that many Indian peoples did not traditionally learn technical skills through listening to verbal instruction, it is not true that verbal instruction was absent in all learning contexts in Indian societies. For example, in many Indian societies youths were lectured in the moral rules and in the magical religious beliefs of the group. Among the Papago young people were "ceaselessly trained" in the moral code (Underhill, 1939). The moral code was repeated over and over. The father was generally the speaker, though the mother might take her turn, especially with the girls. The time was chosen when the family was lying in the dark on sleeping mats, often in the hours before dawn. There existed a special method of speaking; a low insistent monotone. Underhill

believed that these speech situations had an almost hypnotic effect, producing a unity of sentiment in the community "as profound as it was unconscious." Similarly, Ojibwa youths received instructions in the rules of conduct, the traditions of the tribe and exploits of outstanding personalities (Kinetz, 1947; Jenness, 1935). Yokut boys were likewise given verbal instructions in rules of conduct (Gayton, 1948). Realizing that verbal instructions may have occurred in some contexts, we still do not know if the novices carried on a discussion with the individuals who were lecturing, or whether they simply observed and listened to instructions. If they primarily observed and listened, learning style theorists might claim that this evidence further supports, rather than contradicts, their model of the silent Indian child who learns by observing overt behavior, by listening to the instructions the adults do occasionally give, and by subsequent trial and error practice.

INTERFERENCE RESEARCH

Interference theorists argue that Indian students are quiet in school because classroom situations are not structured in ways that permit these students to display their existing verbal competence. Researchers have reported that Indian children utilize speech more frequently in their communities than in schools. Dumont describes his experience in the classrooms and the community of the Oglala Sioux:

> When classes began we did not expect the intensity of constrained and cautious behavior of the students nor the long and sometimes embarrassing periods of silence. Teachers requested, pleaded with, shouted at, commanded, badgered, and cajoled students to talk. When they did their replies could barely be heard or else the word was mouthed. Most often their answers were little more than "Yes," "No," or "I don't know." . . . Our residence in the Indian community allowed us to see that these same children were noisy, bold, daring and insatiably curious. Talking and language were hardly problems once they decided to find out something. If they did not know the

> right words, they found someone within their ranks who would act as an interpreter; at times, many had to be used in one conversation. Even the very young would engage the non-Sioux speaker in language lessons they kept going with considerable laughter and teasing (Dumont, 1972:345-356).

These Oglala Sioux children speak primarily the Native language of their parents. Dumont attributes this situation to "parental indifference to education" and the continued use of the Native language in the home.

Similarly, Philips (1972) reports that children of the Warm Springs Indian Reservation in Oregon show a great deal of reluctance to talk in class. Warm Springs teachers say that these children participate less and less in verbal interaction as they go through school. However, observations of Warm Springs Indian children's verbal interactions outside the classroom indicate a control and productive use of the linguistic rules of a local dialect of English that is manifested infrequently in classroom utterances (Philips, 1972). According to Philips, this indicates that the conditions for speech use, from the Indians' point of view, are lacking in their classroom environments. Although many people on the reservation still speak an Indian language, today all of the Warm Springs children in school are monolingual speakers of English. The dialect of English they speak, however, is not the standard English of their teachers, but one that is distinctive to the local Indian community. Philips notes that in some aspects of grammar and phonology this local English dialect shows influence from the Indian languages spoken on the reservation.

Dumont (1972) reported a large amount of variability in Cherokee children's speech production between different classrooms. Philips (1972) noted a similar interclassroom variability in Warm Springs schools. Both authors attribute this variability to the manner in which the teacher structured the classroom situation. English was normally the primary and more often the exclusive language used in all of these classrooms. Both authors

agree that classrooms in which Indian children are quiet, shy and withdrawn have the following characteristics: (1) the teacher acts as supreme authority; (2) formal lecturing to the class as a group is the typical instructional mode of the teacher; (3) conversation is highly structured and centered around teacher initiated dialogue, that is, the teacher asks questions to which the children are supposed to reply; (4) students are singled out by the teacher and asked to reply verbally to questions, and/or perform nonverbal skills, in an individualistic and competitive way; and (5) students are given the impression that what they have to say is not important if the content of their speech deviates in the slightest from the subject of the teachers' presentation.

In contrast, Philips and Dumont characterize classrooms in which Indian students speak frequently and learn verbal competence as follows: (1) the teacher acts as an equal to his/her students; (2) formal lecturing to the class as a whole is kept to a minimum; (3) classroom conversation is free and open ended, student initiated and controlled, and loosely guided but not structured by the teacher; (4) the teacher interacts with the children in small groups such that individual children are not placed in a competitive situation; and (5) children are given the impression that what they have to say is important no matter how far the content deviates from the structure of the conversation as perceived by the teacher.

Consider Dumont's discussion of "teaching" in Cherokee society.

> Teaching is considered an art in the working out of social relations; secondarily, it is meant to convey academic materials. Because of this, what we commonly think of as a teacher's authority is open to scrutiny from a Cherokee point of view . . . recitation in front of the class, demonstrations at the board, raising hands, and even the way desks are arranged are in the Cherokee view restricting the boundaries of social relations and imposing a structured relationship on the conversation that has not been worked out within the needs and wants of the participants . . . the teacher is to assist, order, and clarify the unknown, and avoid disharmony and bad feelings (Dumont, 1972:364).

Similarly, Philips (1972) reports that among Warm Springs Indians, social situations outside the home are never directed or controlled by a single individual who acts as supreme authority. Temporary "leaders" sometimes emerge among a small subgroup of the community. However, such "leadership" is acquired. An individual may function as a "leader" because he/she has demonstrated unusual ability in a given activity. Any individual may choose to follow such person's suggestion because he/she has independently decided that the suggestion is a good one. However, leadership is not obligatory. The degree to which a Warm Springs child participates in any given social activity is largely a matter of choice. Participation in some form is open to everyone who attends. Each individual can observe and/or participate to his/her liking. Consequently there is no sharp distinction between audience and performer. Each child chooses for himself/herself the degree of his/her participation during any activity. Further, children prefer to develop new knowledge and skill unsupervised and alone. Performance is withheld until competence is obtained:

> . . . Although it is not yet clear how this works in a diversity of situations, it appears that in many areas of skill, the child takes it upon himself to test the skill unsupervised and alone, without other people around. In this way, if he is unsuccessful his failure is not seen by others. If he is successful, he can show the results of his success to those by whom he has been taught, whether it be in the form of a deer that has been shot, a hide tanned, a piece of beadwork completed, or a dinner on the table when the adults come home from work (Philips, 1972: 386).

Havighurst (1957) has stated that the Indians of the Southwest, and especially the Pueblo tribes, are notably cooperative.

> Consequently, if a teacher in a government school, who has been accustomed to assume that children are competitive, tries to appeal to this kind of motivation by using spelling contests or by encouraging children to call attention to the mistakes of other children, the teacher may be perplexed to find that such teaching methods do not work very well. The Indian children may not parade their knowledge before others nor try to appear better than their peers (Havighurst, 1957:109).

This information along with the preceding studies indicates that Native American children are essentially cooperative and group oriented in their communities. Also, they suggest that Indian children are quiet in school because they are often thrust into individualistic competition with their peers in classroom situations. Other studies among Native Americans completely counter this argument. For example, Rohner (1965) states that among the Kwakiutl forms of independence and aggression are rewarded in non-school activities but discouraged in the classroom. The author believes that the Kwakiutl student must learn a form of compliance behavior in school which is not expected out of school. In the community competition with peers rather than sharing and cooperation is said to be the norm. Wolcott (1967) sees the Kwakiutl as being both cooperative and competitive:

> In meeting their classroom assignments the pupils interpreted their tasks as a matter of group as well as of individual concern. This had one major advantage in that for many tasks pupils paired off and completed assignments in informal competitions . . . The motivating effect of their self-imposed competition was more than offset from the teacher's point of view by the tendency of pupils constantly to help each other (Wolcott, 1967:104).

It should come as no surprise that Indian children's willingness to speak up in individualistic and competitive situations may vary between and within tribal groups. However, Bowd (1974) has noted that the inter- and intratribal variability which exists in the range of Native American societies has all too often been ignored by educators and researchers concerned with comparitive linguistic and cognitive competence. Except in rare instances, all Native American groups have been assumed to be similar in terms of ecological context, cultural heritage, linguistic history, acculturative status, subsistence base, social organization, value orientation and cognitive style. It is possible that the type of socio-linguistic interference reported by Dumont and Philips above will not

exist to the same extent in all the Native American classrooms. This is a complex problem which is confounded at least by the variability in teacher competence and style, the differential acculturative statuses of Native Americans within and between tribes and the reliability of relevant research.

Interference theorists believe that teachers often demand Indian students to display speech competence in classroom situations which require silence in the child's home and community environment. We have noted the reluctance of Warm Springs, Cherokee, Sioux and Pueblo children to speak up in individualistic competitive situations. In addition, Werner and Begishe (1968) have suggested that Navajo people are reluctant to perform skills until the skills are fully mastered.

> The Navajo approach . . . stresses the acquisition of competence as a prerequisite for performance. Navajos seem to be unprepared or ill at ease if pushed into early performance without sufficient thought or the acquisition of mental competence preceding the actual physical activity . . . The Anglo approach stresses performance as a prerequisite for the acquisition of competence . . . The comprehension of the principles is perceived as a corollary and automatic by-product of the ability to perform (Werner and Begishe, 1968:1-2).

If this is true and applies to speech competence in English, one would expect Navajo children to refrain from performing English speech skills since the majority of Navajo six-year-olds on or near reservation areas come to school not speaking enough English to do first-grade work (Spolsky, 1970). Devereux (1964) reported that the Mohave displayed a "singular reluctance" to speak English, unless they spoke English well. Dumont (1972) noted that Cherokee students talked more often and freely in a classroom in which the teacher encouraged the children to incorporate words and phrases from their native language in their speech.

Basso (1970) stated that the Western Apache refrain from speaking

when meeting strangers. The Western Apache do not feel compelled to "introduce" persons who are unknown to each other. Eventually, it is assumed, they will begin to speak. However, this is a decision that is properly left to the individuals involved, and no attempt is made to hasten it. Outside help in the form of introductions or other verbal routines is viewed as presumptuous and unnecessary. Strangers who are quick to launch into conversation are frequently eyed with undisguised suspicion. A typical reaction to such individuals is that they "want something."

> If the stranger is an Anglo, it is assumed that he "wants to teach us something" (i.e., give orders or instructions) or that he "wants to make friends in a hurry." The latter response is especially revealing, since Western Apaches are extremely reluctant to be hurried into friendships--with Anglos or each other (Basso,1970:218).

Basso noted five other situations in which silence is culturally appropriate among the Western Apache; during "courting," when "children, coming home" after a long absence, while "getting cussed out," when "being with people who are sad," and when "being with someone for whom they sing." Basso concludes: (1) in Western Apache culture, the absence of verbal communication is associated with social situations in which the status of focal participants is ambiguous. (2) Under these conditions, fixed role expectations lose their applicability and the illusion of predictability in social interaction is lost. (3) To sum up and reiterate: keeping silent among the Western Apache is a response to uncertainty and unpredictability in social relations.

Mowrer (1970), a Navajo, and evidently a student of Basso, inquired into the situational features of Navajo silence behavior on the Navajo Reservation in the vicinity of Tuba City, Arizona. She found silence to be appropriate among these Navajo during courting, at the return of a

relative after a long absence, when confronted by someone who is angry and shouting, during mourning, and while in the presence of someone who is being sung over by a medicine man. Basso believes that Mowrer's observations "suggest that striking similarities may exist between the types of social contests in which Navajos and Western Apaches refrain from speech" (Basso, 1970:228). It is indeed curious that Mowrer does not mention silence as being appropriate for Navajos upon meeting strangers, since all other categories of silence correspond with the categories of silence among the Western Apache.

Interference theorists argue that Indian children from cultures such as the Western Apache or the Navajo would probably react with silence upon entering school. Confronted with a substantially new peer-group and an unknown teacher representing a strange ethnic group, some Indian children are thought to withdraw and refrain from speaking. Given the fear that most Native Americans have of Caucasians, silence is thought to be especially prominent if the child is faced with Caucasion peers and a Caucasion teacher. How long the child's silence is expected to last is unknown. As we noted earlier, teachers in Warm Springs schools state that their Indian children participate less and less in verbal interactions as they go through school (Philips, 1972). If Basso is correct in concluding that silence is a culturally appropriate response to uncertainty and unpredictability in social relations for many Native American children, it seems that this factor might partially account for the quiet classroom behavior of some Indian students.

Dumont (1972) remarked that Sioux students exercised control over teaching and learning in their classrooms by controlling their verbal behavior. "Silence governed teaching and learning, representing a student

developed and controlled tactic that excluded the teacher from almost all student activities and that made school a rather pleasant experience" (Dumont, 1972:346). Seeing the speech differences between the school and the home, Dumont and his colleagues began to call the above classroom behavior a "mask of silence." In subsequent work in Cherokee classrooms Dumont noted the same phenomenon. Silence for Cherokee children was a "retreat from the word," a means to sever communication between teacher and students.

> . . . it (silence) was a retreat from the word, intended to sever communication and to serve as a strategy in a network of student defense needed to deal with the conflict resulting from cultural differences. Employed in this manner the teacher has little control over what students learn and, especially, over how they structure the experience of school (Dumont, 1972:348-349).

Also, silence is said to characterize the intercultural reality for which there are no words. Cultural differences are the unknown, the foreign, and the strange. Dumont believes that if there are no words for this reality in either the students' or teacher's vocabulary there hardly can be any in the language they share.

Finally, interference theorists point to mismatches in speech intensity and listening style as one possible source of Indian quietness in classroom situations. Polgar (1960) noted that Mesquakie Fox children near Tama, Iowa, interpreted the normal loudness of the teacher's voice and the verbal directness of the teacher as "meanness" and as "getting mad." Hall (1969) describes a cultural difference in listening behavior between Navajos and Caucasian teachers, at least as it existed in the 1930's:

> Unlike middle-class whites, the direct open-faced look in the eyes was avoided by Navajos. In fact, Navajos froze up when looked at directly. Even when shaking hands they held one in the peripheral field of the eyes . . . By now some of my readers are undoubtedly thinking what it must have been like to be a small Navajo child in schools taught by whites where many teachers were frustrated by behavior they couldn't understand . . . The teacher would raise his voice, while looking directly at the child hanging his head. "What's the matter! Can't you talk? Don't you even know your own name?" (Hall, 1969:379).

IMPLICATIONS FOR INSTRUCTION

To conclude, let us consider the implications of the literature reviewed for the teaching of Native American children. Based on the current body of research, the following fifteen instructional processes and contexts appear to be advantageous in enhancing the verbal performance and classroom participation of American Indian children. I have organized these suggestions into four general categories.

General Atmosphere and Classroom Organization

1) The teacher should act as an equal to his/her students, rather than as a supreme authority.

2) The teacher should interact with the children in small groups such that the individual children are not placed in a competitive situation in front of the class as a whole. The situation whereby a child is singled out from a large group and asked to reply verbally to questions and/or perform nonverbal skills should be especially avoided.

3) Teachers should not ask the child to demonstrate knowledge or skill prior to the acquisition of competence, especially in the presence of a group of peers.

Observational and Experiential Learning

4) Teaching must be by example as well as by word. Tasks to be learned should be demonstrated as well as explained to allow the child to observe the necessary steps and tactics which are required.

5) Experimental learning situations should be created whenever possible such that the child can learn through doing rather than through verbal description alone.

6) Linguistic experiences should be directly tied to significant experimental learning situations. The child should be introduced to the linguistic labels for things and processes while he/she is engaged in relevant activities.

Verbal Activities

7) Formal lecturing to the class as a whole must be kept to a minimum.

8) Classroom conversation should be free and open ended, student initiated and controlled, and loosely guided but not structured by the instructor. Conversation which is highly structured and centered around teacher initiated dialogue should be avoided. That is, teachers should not simply ask questions to which the children are supposed to reply.

9) Children should be given the impression that what they have to say is important no matter how far the content varies from the structure of the conversation as perceived by the teacher.

10) A bilingual format should be employed for children who come from homes which actively use their traditional language. For children from more acculturated homes, classes in the traditional language should be initiated to enhance the child's pride in his/her cultural heritage.

11) Dialectic differences in English which appear in various native American groups should be understood by the teacher and incorporated in classroom discussions.

Community Relations

12) Materials and activities to which the children are initially exposed in the classroom must be as closely related to the home and community experiences of the child as possible. New experiences should be introduced at a rate that holds the child's attention.

13) Schools should be close to the community they serve and incorporate skilled Native Americans as linguistic, artistic, occupational and professional role models.

14) The accent should be on basic reading, writing and numerical skills using as many culturally relevant examples as possible. The culture of reference should be that which the child currently experiences in the home and the community, not the pre-contact culture as recorded in the ethnographic record. However, children should be introduced to their culture history as quickly as they can maintain an interest.

15) Finally, teachers must be sensitive to and interested in cultural diversity. They should live with and socially interact with the Native American community they service, thus becoming familiar to the children they teach. Native American teachers may provide especially familiar and stimulating models to Native American children.

FOOTNOTES

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[2]The presented data concerning the cognitive style of American Indians offers a constructive challenge to Cohen's (1969) model proposing two "mutually incompatible conceptual styles;" analytic and relational. The Native American tribes discussed do not appear to fit either model exclusively. On the one hand, they tend to score almost as well and sometimes better than middle-class children on nonverbal-perceptual tasks. Based on Cohen's list of test response characteristics and sociobehavioral correlates of conceptual styles (1969:Appendix A), Native Americans are definitely more analytic than relational. They show a sensitivity to parts of objects, an awareness of nonobvious features, an enhanced ability at sorting tasks, a high ability to detect changes in a monotonous but constantly changing perceptual field over a long period of time, analytic scores relatively high on nonlanguage sections on most tests, a long attention span, deep attention and concentration, a tendency not to be easily distracted and high perceptual vigilance.

On the other hand, the Native American tribes discussed tend to display characteristics which are more typical of the shared function family and friendship group than the formally organized alternative, according to Cohen's list of some important differentiating characteristics of such groups (1969:Appendix B). For example, the distribution of critical group functions tend to be widely shared among all members of the group, interaction patterns are relatively fluid and changing, the organization of status relationships are fluid and shifting, the distribution of privilege and rewards are widespread and equal, leadership is shared, periodic and continuing participation in all critical group functions are positively sanctioned, status boundaries are loosely held, individuals have the individual right to challenge group objectives and current means of attaining group objectives, the depth of identification with the group is intense, and the manner of identification with the group is marked by involvement in all group functions.

The following question then arises. How can Cohen's model account for the fact that children who are apparantly socialized in shared function family and friendship groups display an analytic conceptual style? One might respond that despite the Native Americans' relatively good performances on nonverbal tasks, their poor performances on verbal tests indicates that they display a relational conceptual style. It is this reseachers position, however, that these verbal scores are not representative of existing verbal competence. Standardized verbal tests conducted in a recently introduced language can not possibly constitute an accurate measure of another culture's verbal-analytic skills. The question remains unanswered. A few words of caution are due. An accurate description of one American Indian tribal group at a given level of acculturation may not be an accurate description of the same group at a different level of acculturation. Further, what is true for one tribe may not be true for another. We must be extremely careful not to characterize all North American Indian peoples based on the study of a few.

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